

AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior versions and listings of claims in the application.

1. (Currently Amended) A method for migration between a permanent connection and a switched connection in a transmission network, the method comprising ~~the steps of~~:

a) the ingress node of ~~[[the]]~~ a current connection forwarding ~~[[the]]~~ a message of connection migrating request node by node in ~~[[the]]~~ a direction of traffic signal transmission of the current connection starting from ~~[[the]]~~ an ingress node until ~~[[the]]~~ an egress node of the current connection, after receiving ~~[[a]]~~ the message of connection migrating request; and

b) making migration between a permanent connection and a switched connection node by node after receiving the message of connection migrating request.

2. (Currently Amended) ~~[[A]]~~ The method according to Claim 1, wherein ~~[[said]]~~ the step of forwarding the message of connection migrating request and the ~~process of step of making the connection migration in this method is~~ are performed by ~~[[the]]~~ a control plane of ~~[[the]]~~ a node and the message of connection migrating request is transferred via the control links.

3. (Currently Amended) ~~[[A]]~~ The method according to Claim 2, wherein a migration from ~~[[a]]~~ the permanent connection to ~~[[a]]~~ the switched connection in ~~[[said]]~~ the step of

making the migration process between ~~[[a]]~~ the permanent connection and ~~[[a]]~~ the switched connection comprises:

creating a state of the switched connection on the control plane of the node and handing over ~~[[the]]~~ cross-connections of the permanent connection at ~~[[this]]~~ the node to the control plane.

4. (Currently Amended) ~~[[A]]~~ The method according to Claim 2, wherein a migration from ~~[[a]]~~ the switched connection to ~~[[a]]~~ the permanent connection in ~~[[said]]~~ the step of making the migration process between ~~[[a]]~~ the permanent connection and ~~[[a]]~~ the switched connection comprises:

deleting ~~[[the]]~~ a state of the ~~current~~ switched connection from the control plane of the node and handing over ~~[[the]]~~ cross-connections of the switched connection at ~~[[this]]~~ the node to ~~[[the]]~~ a management plane.

5. (Currently Amended) ~~[[A]]~~ The method according to Claim 2, wherein ~~[[said]]~~ the control plane is based on TCP/IP protocol, and ~~[[said]]~~ the step of making the migration between ~~[[a]]~~ the permanent connection and ~~[[a]]~~ the switched connection is implemented by using the RSVP-TE signaling protocol or the CR-LDP signaling protocol.

6. (Currently Amended) [[A]] The method according to Claim 1, wherein [[said]] the migration between [[a]] the permanent connection and [[a]] the switched connection node by node in the step [[Step]] b) ~~of the method~~ comprises: making the migration between [[a]] the permanent connection and [[a]] the switched connection node by node starting from the egress node until the ingress node in [[the]] a reversed direction of [[the]] a forwarding path of the message of connection migrating request after the message of connection migrating request ~~has reached~~ reaches the egress node.

7. (Currently Amended) [[A]] The method according to Claim 6, further comprising: each [[said]] node, after completing the migration, sending a message of migration completing notification to [[the]] a next node required to make the migration until the ingress node, which sends [[said]] the message of migration completing notification to [[the]] an initiator of the connection migrating request.

8. (Currently Amended) [[A]] The method according to Claim 1, wherein [[said]] the migration between [[a]] the permanent connection and [[a]] the switched connection node by node in the step [[Step]] b) ~~of the method~~ comprises: each node making [[a]] the migration between [[a]] the permanent connection and [[a]] the switched connection ~~right~~ after [[a]] receiving the message of connection migrating request ~~is received~~.

9. (Currently Amended) [[A]] The method according to Claim 8, further comprising:
after all [[said]] nodes complete the migration, forwarding the message of migration completing notification node by node starting from the egress node till the ingress node in the reversed direction of the forwarding path of [[said]] the message of request, and the ingress node sending [[said]] the message of migration completing notification to [[the]] an initiator of the connection migrating request.

10. (Currently Amended) [[A]] The method according to Claim 7, wherein [[said]] the message of migration completing notification ~~contains the~~ comprises routing information of [[the]] an entire connecting link of the migration.

11. (Currently Amended) [[A]] The method according to Claim 7, wherein [[said]] the message of migration completing notification ~~contains the~~ comprises an identifier of [[the]] a current switched connection if [[said]] the migration between [[a]] the permanent connection and [[a]] the switched connection is a migration from [[a]] the switched connection to [[a]] the permanent connection.

12. (Currently Amended) [[A]] The method according to Claim 1, wherein [[said]] the message of connection migrating request received by the ingress node comprises: [[the]] an ingress node identifier and incoming port information of the ingress node of the connection currently requested to be migrated, or the ingress node identifier and outgoing port information

of the ingress node of the connection currently requested to be migrated, and each node adds its own outgoing port information to the message of connection migrating request before forwarding the message.

13. (Currently Amended) ~~[[A]]~~ The method according to Claim 12, wherein, in the ~~process~~ step of forwarding ~~[[said]]~~ the message of connection migrating request by each node, the outgoing port information from ~~the~~ a present node to ~~[[the]]~~ a next node is added to the message of connection migrating request if the message includes the incoming port information; and the incoming port information from the present node to the next node is added to the message of connection migrating request if the message includes the outgoing port information.

14. (Currently Amended) ~~[[A]]~~ The method according to Claim 12, wherein ~~[[said]]~~ the incoming port information comprises ~~[[the]]~~ an identifier of the incoming port, or ~~[[the]]~~ an identifier of the incoming channel, or the combination thereof; and ~~[[said]]~~ the outgoing port information comprises ~~[[the]]~~ an identifier of the outgoing port, or ~~[[the]]~~ an identifier of the outgoing channel, or the combination thereof.

15. (Currently Amended) ~~[[A]]~~ The method according to Claim 12, wherein ~~said own~~ the outgoing port information of the node is obtained by inquiring ~~[[the]]~~ cross-connection information stored in the node itself based on the incoming port information of the current node.

16. (Currently Amended) [[A]] The method according to Claim 12, further comprising before [[said]] the ingress node makes [[a]] the migration between [[a]] the permanent connection and [[a]] the switched connection: deciding whether the ingress node identifier and incoming port information or the ingress node identifier and outgoing port information contained in the received message of connection migrating request is correct or not, if yes, making the migration, otherwise returning a message of failure ~~and ending this process~~.

17. (Currently Amended) [[A]] The method according to Claim 12, wherein the message of connection migrating request received by [[said]] the ingress node further comprises: [[the]] an egress node identifier, or the egress node identifier and outgoing port information at the egress node of the current connection requested to be migrated.

18. (Currently Amended) [[A]] The method according to Claim 17, further comprising before [[said]] the egress node makes [[a]] the migration between [[a]] the permanent connection and [[a]] the switched connection: deciding whether the egress node identifier or the egress node identifier and outgoing port information contained in the received message of connection migrating request is correct or not, if yes, creating or deleting [[a]] the switched connection at the node, otherwise returning a message of failure ~~and ending this process~~.

19. (Currently Amended) [[A]] The method according to Claim 1, wherein, if [[said]] the migration between [[a]] the permanent connection and [[a]] the switched connection is a

migration from [[a]] the switched connection to [[a]] the permanent connection, the message of connection migrating request received by [[said]] the ingress node comprises: [[the]] an identifier of [[the]] a current switched connection.

20. (Currently Amended) [[A]] The method according to Claim 1, wherein [[said]] the connection is a uni-directional connection or a bi-directional connection.

21. (Currently Amended) [[A]] The method according to Claim 1, wherein [[said]] the switched connection ~~in the method~~ is a soft permanent connection initiated by network management system or a switched connection initiated by a client device or a proxy thereof.

22. (Currently Amended) [[A]] The method according to Claim 1, wherein [[said]] the transmission network is a Synchronous Digital Hierarchy, or a synchronous optical network, or a wavelength switched network, or an Optical Transport Network (OTN).